LANTEK User's Manual Addendum

LANTEK 6/7/7G Upgrades

Document Part No. 6510-00-5007 Rev. A

IDEAL

LANTEK 6/7/7G Upgrades

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Synopsis of the Upgrade

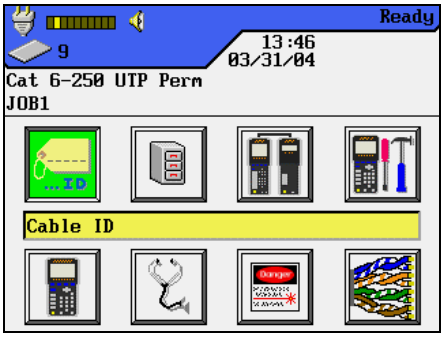
- ✓ The LANTEK 6/7/7G tester is capable of certifying cables to Level IV accuracy with a frequency of 1 GHz.
- ✓ LANTEK 6/7/7G Premium package memory upgrade from 32mb to 64mb Compact Flash Card.
- ✓ LANTEK 6/7/7G Firmware version upgrade from 1.0 to 2.0.
  - Icon changes
  - Date Information location
  - Additional Softkeys
  - Tester Configuration Changes
  - Changes in Cable Type Menu
  - Changes in the Stored Results Menu
- ✓ LANTEK REPORTER Software version upgrade 1.010 to 3.200.
- ✓ LANTEK 6/7/7G Tester Calibration re-defined for clarification.
- ✓ Testing and Troubleshooting Nexans Cabling System added to the LANTEK 6/7/7G.
- ✓ Changes in Testing and Troubleshooting of Block Connector Systems.
- ✓ Testing and Troubleshooting with Patchcords added to the LANTEK 6/7/7G.
- ✓ Testing in DUALmode^{TM} added to the LANTEK 6/7/7G.

- ✓ Documenting TIA/EIA 606-A Standards added to the LANTEK 6/7/7G.
- ✓ Testing and Troubleshooting Fiber Optics Moved to FIBERTEK™ / TRACETEK™.
- ✓ Part Number Changes.

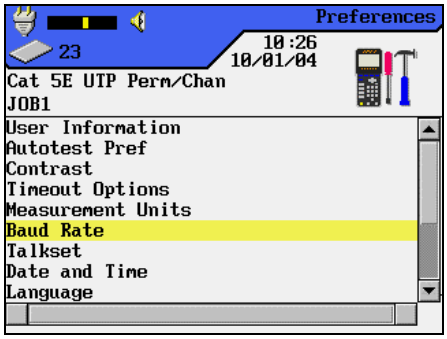
LANTEK Firmware Version Upgrade from 1.0 to 2.0

GUI Changes – (User's Screen)

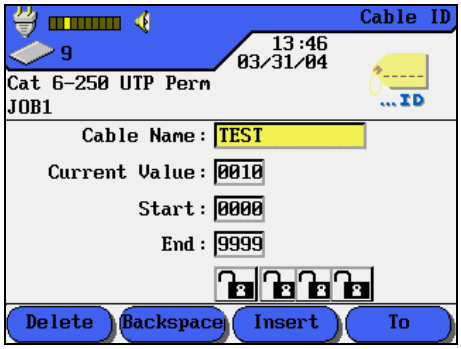
- Date Information located below Time Display.
- Cable Type Icon change from to .



- In the Preference Screen, PC Printer IF selection changes to Baud Rate.



- In setting the Cable ID, to activate the Auto Increment feature for a character select the unlock icon .



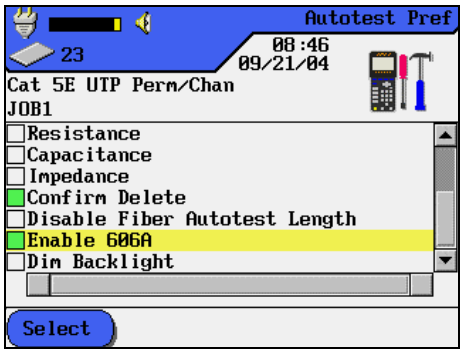
Softkey Changes

Additional Softkey activities enhancing user defined processes.

Zoom out	Scales the graph to the minimum view limits
Zoom in	Scales the graph to the maximum view limits
Overwrite	Overwrites the highlighted data entry
Select	Activates or deactivates the highlighted option
Edit	Edits existing data previous recorded
Run	Runs the selected activity
Refresh	Automatically scans and identifies storage media for use and refreshes info
Tref	Changes reference temperature
Color	Changes wire map color or display only

Tester Configuration Changes

✓ Additional options within the Autotest Preferences:



- Disable Fiber Autotest Length added.
  This option allows the user to disable or enable fiber autotest length procedure.

- Enable 606A added.
  Enables 606-A Standards testing.

- Dim Backlight added.
  Toggles illumination of screen display backlighting.

- Enable 24 ELFEXT removed.

✓ Additional options within the Language Preferences:

- Chinese
- Czech
- Dutch
- Norwegian
- Korean
- Polish

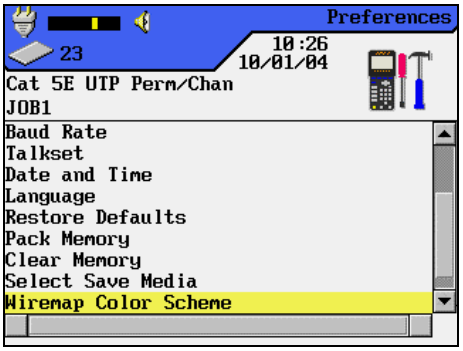
✓ Addition to the Preference menu

- Wiremap Color Scheme – User selected wiremap color scheme.
- Temperature – User selected temperature reading Fahrenheit or Celsius.

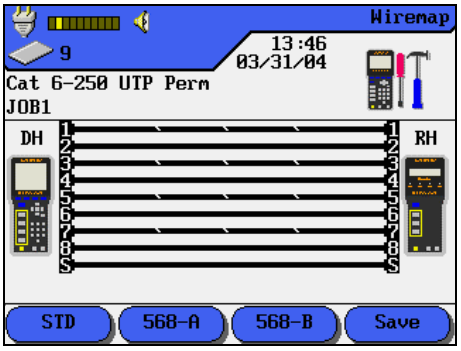
Selecting Wiremap Color Scheme

Use this option to select the type of wiremap color scheme to use.

1. From the Preferences screen, press the **Arrow** key to highlight **Wiremap Color Scheme**.



2. Press **Enter**. The Wiremap Color Scheme screen appears.



3. Use the F1, F2, or F3 Keys to select either STD, 568-A, or 568-B type cable.

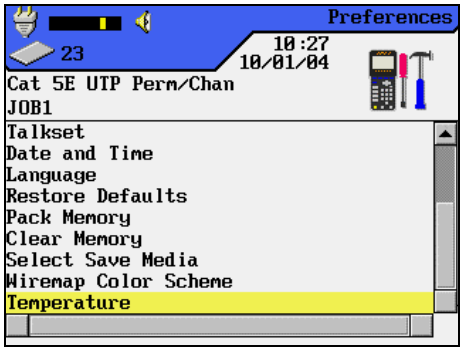
4. Use F4 key to save selection.

5. Press ENTER to save or Escape to exit without saving changes.

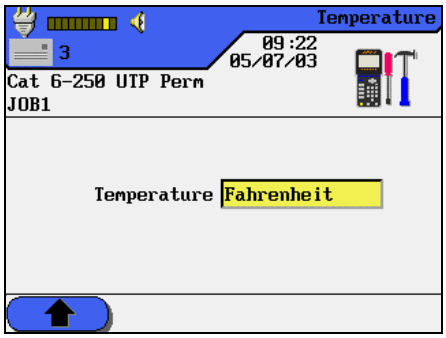
Selecting Temperature

Use this option to select the temperature to use.

1. From the Preferences screen, press the **Arrow** key to highlight **Temperature**.



2. Press **Enter**. The Temperature screen appears.



3. Select or to select either Fahrenheit or Celsius.

4. Press

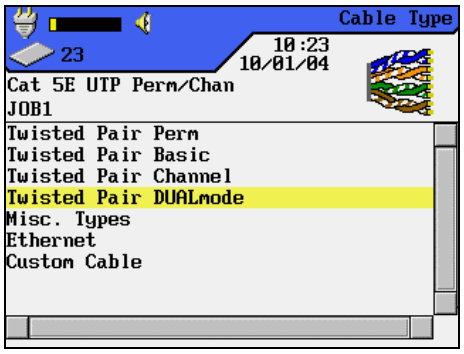
to save or

to exit.

Note: Pressing the Escape key and upon exiting, the user has the option to save or not save the changes selected during this process.

Changes in Cable Type Menu

- ✓ Correction to the process in displaying Cable Type screen by either pressing both SHIFT and F4 F8 keys at the same time, or selecting on the DH Ready screen.
- ✓ Twisted Pair DUALmode added to the Cable Type menu.



- ✓ Removal of Fiber as an option. Fiber testing and troubleshooting performed using FIBERTEK™/TRACETEK™.
- ✓ Removal of the option, Adapters from the Custom Cable Parameters menu. This option was used to indicate which near-end and far-end cable adapters are currently being used.

Changes in the Stored Results Menu

- ✓ Removal from the Job Options Menu - Undo Delete Jobs.
- ✓ Addition to the Job Options Menu:
  - Restore All Deleted Jobs - Restores all deleted test currently from internal memory.
  - Copy Selected Jobs to Compact Flash - Copies all test from internal memory to Compact Flash.

LANTEK REPORTER Software Version Upgrade 1.010 to 3.200

- ✓ User's approach to IDEAL website and software updates can now be access through the Help Menu selection.
- ✓ User can now Browse For Tests if the Stored Tests are kept on a local drive or network drive when performing an upload procedure.
- ✓ The database is automatically backed up prior to every test upload.

LANTEK 6/7/7G Tester Calibration Re-defined for Clarification

Note: The following calibration procedure applies to Category 5e/6 lengths. Please refer to LANTEK User's Manual, Chapter 7, Cable Testing Fundamentals regarding calibration and testing for Nexans Cabling, Block Connector Systems, Coax Cabling and Fiber Optics.

A "Field Calibration is required" screen will appear if the test being performed requires a field calibration prior to testing activities. The purpose of calibration is to (1) synchronize the units, (2) qualify (test) the patchcords and (3) gather loss data regarding the patchcords and mated connections.

Note: Calibration should also be done whenever there is a change of the reference patchcords.

This Field Calibration is a 4-step process. Steps 1 and 2 are performed with the patchcords connected to the Handsets. Steps 3 and 4 are performed with open-ended patchcords (Only one end connected to the Handsets).

Note: LANTEK 6/7/7G comes complete with the adapters necessary to test Category 5e/6 cabling. Tera Test Kits can be ordered from IDEAL INDUSTRIES, check for availability.

To calibrate the tester, perform the following:

Step 1

Connect the channel adapters to the Display Handset (DH) and Remote Handset (RH).

Power both units on.

Connect the patchcord that you plan to use as the RH patchcord to the adapters of the DH and RH units.

From the DH Ready screen, select **Field Calibration** **.** The Calibration screen appears.

From the DH Field Calibration screen, select **START** to begin the calibration process on the first (RH) patchcord. This first process takes about 10-20 seconds to complete.

At the completion of the first calibration process, tag the RH end of the first patchcord. Disconnect the first patchcord from the DH and RH unit adapters. This tag will remind you which end to reinsert into the RH for Step 4.

Step 2

Insert the second (DH) matching patchcord into both the DH and RH adapters.

From the DH Field Calibration screen, select **START** to begin the second calibration step.

At the completion of the second patchcord step, disconnect the second patchcord from the RH unit adapter (leaving the second patchcord attached to the DH unit).

Step 3

Re-insert the tagged end of the first patchcord into the RH unit adapter.

From the DH Field Calibration screen, select **START** or press AUTOTEST to begin the third calibration step.

Step 4

From the RH, press AUTOTEST to begin the fourth calibration step.

If calibration is successful, the DH will briefly Display "Calibration Complete" and the RH will briefly display the PASS light.

If calibration is unsuccessful, the DH will briefly display either a Warning screen displaying "No Remote Handset" or a Calibration Failure screen.

Testing and Troubleshooting Nexans Cabling System Added to the LANTEK 6/7/7G

A field calibration should be performed prior to implementing a test of the Nexans cabling system. This process will ensure (1) synchronizing of the units, (2) qualifying (testing) of the patchcords and (3) gathering of loss data regarding the patchcords and mated connections.

The field calibration is a 4-step process. Process 1 and 2 are performed with the Nexans Calibration Adapters connected to the Handsets. Process 3 and 4 are performed with the Nexans Permanent Link Adapters open-ended patchcords and then the Nexans Calibration Load Terminator attached.

The Nexans testing kit comprises a Category 7/7G connector product, which is backward compatible with Category 6 – RJ45s.

The equipment required for a Nexans calibration procedure is:

- Display Handset
- Remote Handset
- Nexans Calibration Adapters
  (Two adapters joined by a short segment of Category 7/7G cable)
- Nexans Calibration Load Terminator
  (100Ω Jack)

- Nexans Permanent Link Adapters
  (A set of two adapters, each with a patchcord (approximately 2 meters) soldered to the adapter at one end and a Nexans Category 7/7G plug at the opposite end)

Nexans Field Calibration

Note: Nexans GG 45 Test Kits can be ordered from IDEAL INDUSTRIES.

This field calibration is a 4-step process. Steps 1 and 2 are performed with the Nexans Calibration Adapters connected to the Handsets. Steps 3 and 4 are performed with the Nexans Permanent Link Adapters open-ended patchcords and then the Nexans Calibration Load Terminator attached.

The Nexans test kit comprises a Category 6 connector product that is backward compatible with Category 6 RJ45s.

To calibrate the tester, perform the following:

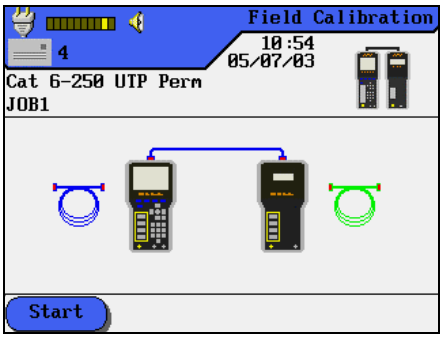
Steps 1 and 2

Connect the Nexans Calibration Adapters to the Display Handset (DH) and Remote Handset (RH).

Power both units on.

From the DH Ready screen, select **Field Calibration** **.**
The Calibration screen appears.

From the DH Field Calibration screen, select Start to begin the calibration process. This process takes about 10-20 seconds to complete.

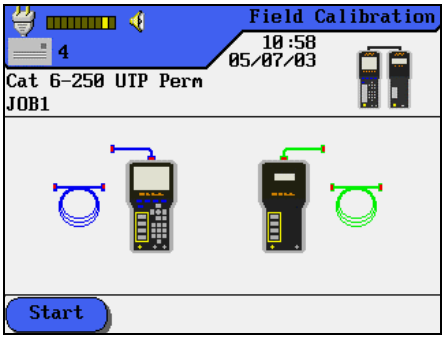


At the completion of steps 1 and 2, disconnect the Nexans Calibration Adapters.

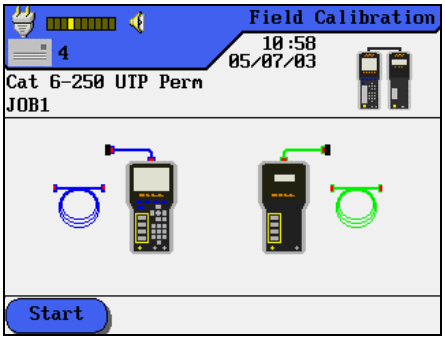
Step 3

Insert the Nexans Permanent Link Adapters into both the Display and Remote Handsets.

From the DH Field Calibration screen, select Start to begin the third calibration process.



Terminate the open end of the patchcord with the Nexans Calibration Load Terminator and select Start again.



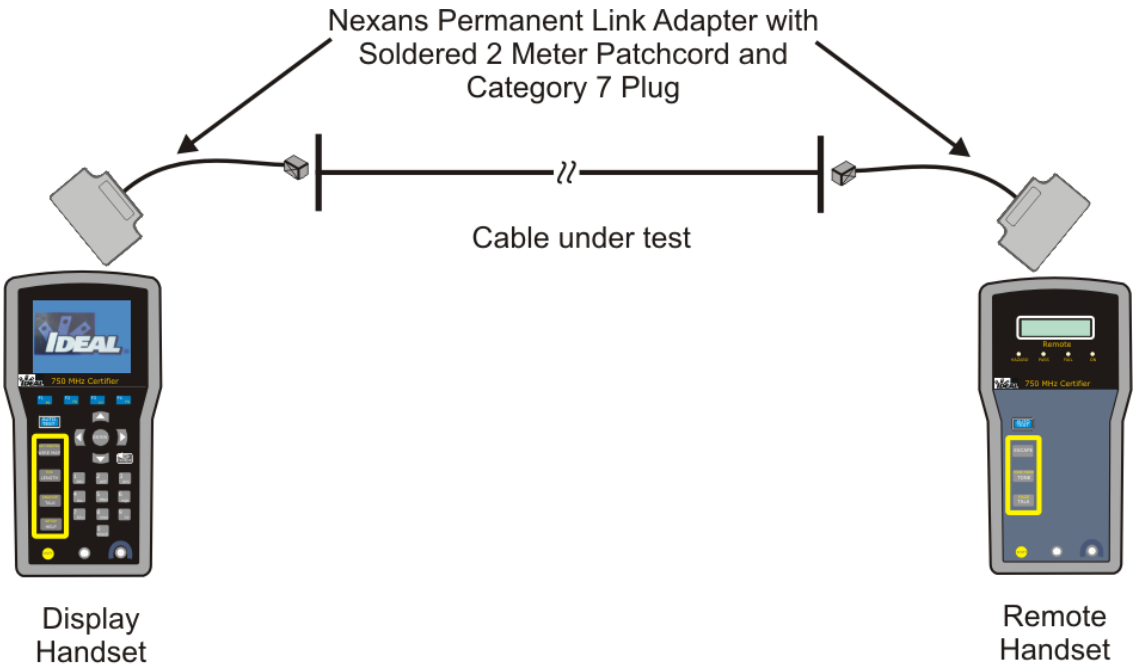
Step 4

From the RH, press AUTO TEST to begin the fourth calibration process.

Terminate the open end of the patchcord with the Nexans Calibration Load Terminator and press AUTO TEST again.

When calibration process 4 is completed, the LANTEK is ready for testing Permanent Links.

Testing a Nexans Cabling System



Typical Configuration for Nexans Cable Testing

Typical configuration for testing has the DH unit and RH unit connected to the Nexans Permanent Link Adapters. Each Nexans Permanent Link Adapter has a patchcord (approximately 2 meters) soldered to the adapter at one end and a Nexans Category 7/7G plug at the opposite end. The cable under test is connected at the Category 7/7G plug end of both the DH and RH ends.

Changes to Testing and Troubleshooting with a Block Connector System

At times, it is necessary to test directly from a connecting block to either a patch panel or office outlet.

A field calibration should be performed prior to implementing a test of the block system. This process will ensure (1) synchronizing of the units, (2) qualifying (testing) of the patchcords and (3) gathering of loss data regarding the patchcords and mated connections.

The field calibration is a 4-step process. Process 1 and 2 are performed with the patchcords connected to the Handsets. Process 3 and 4 are performed with open-ended patchcords (Only one end connected to the Handsets).

Note: The following process describes the calibration and testing procedures for the block connector system. These procedures can be used for either the 66, 110, or BIX Block systems.

The equipment required for a block calibration procedure is:

- Display Handset
- Remote Handset
- RJ45 to RJ45 Patchcord
- RJ45 to Block Plug Patchcord
- A Block Calibration Adapter (T568A or T568B) depending on the connection system that will be scheduled for testing. (For use only in the 66 Block system)

Equipment for a Block Calibration Procedure

For Block 66 Systems

The RJ45 block calibration adapters connected to the block during calibration is either the T568A or 568B calibration adapter. The T568A adapter is used with patchcords connected in a TIA-568A configuration. The T568B adapter is used with patchcords connected in a TIA-568B configuration. Both calibration adapters have the standard RJ45 plug at the opposite end.

Field Calibration using Block Adapters

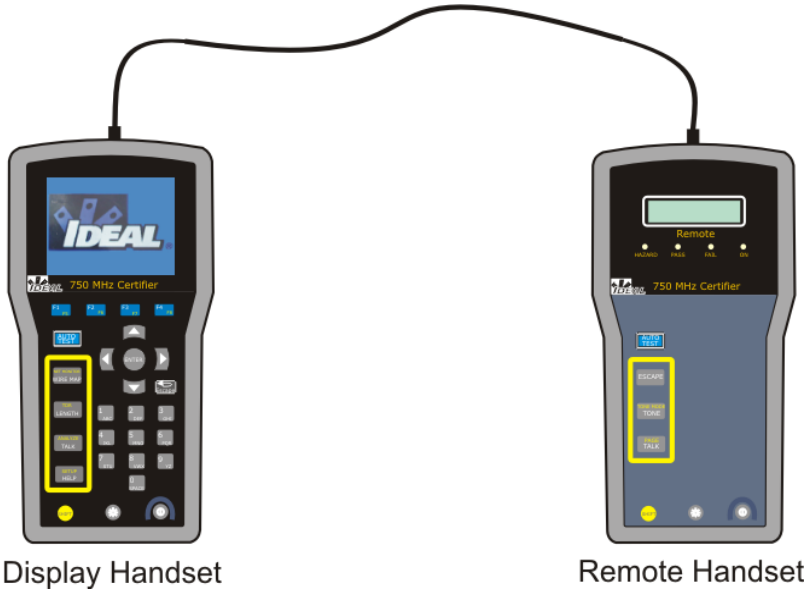
Note: A Block Adapter Kit can be ordered from IDEAL INDUSTRIES. The kit contains adapters for the following block systems: 66, 110 and BIX.

Steps 1 and 2

Connect the channel adapters to the Display Handset (DH) and Remote Handset (RH).

Power both units on.

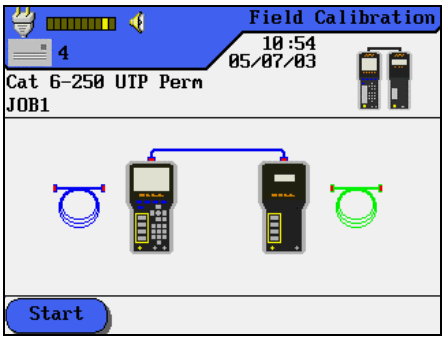
Connect the RJ45 to RJ45 Patchcord that you plan to use as the RH Patchcord to the adapters of the DH and RH units.



From the DH Ready screen, select **Field Calibration** .
The Calibration screen appears.

From the DH Field Calibration screen, select Start to begin the calibration process on the first (RH) Patchcord.

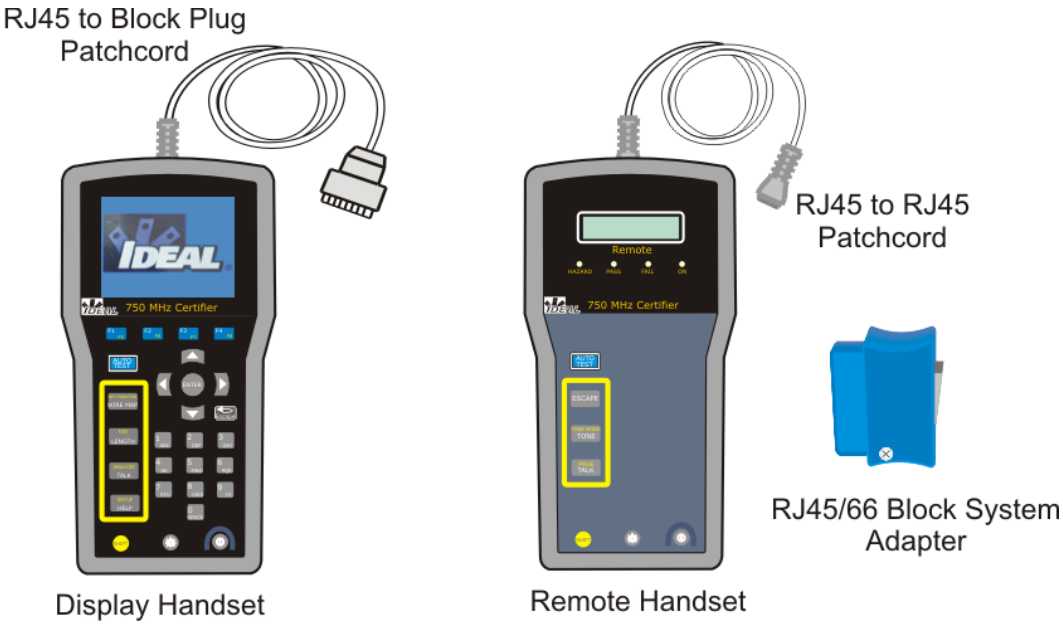
Then select Start again to perform the calibration process. This will take about 10-20 seconds to complete.



At the completion of this calibration process disconnect the RJ45 patchcord from the DH unit leaving the RJ45 to RJ45 patchcord attached to the RH unit.

Step 3

Insert the second (DH) RJ45 to Block Plug patchcord into the DH unit where the RJ45 end is connected into the DH unit adapter and the block plug is left open-ended.



(**For the 66 Block System**) Insert the block calibration adapter onto the block plug end of the patchcord.

Note: If field testing a TIA-568A connection system, use a T568A calibration adapter. If field testing a TIA-568B connection system, use a T568B calibration adapter.

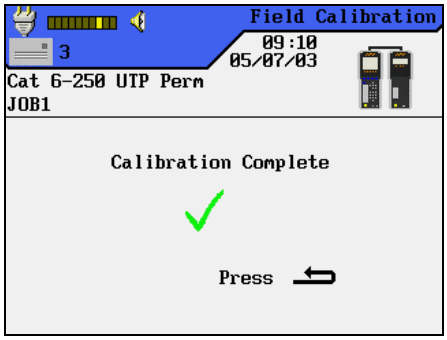
Note: In this calibration procedure, it is assumed that the DH unit will be attached to the block and the RH unit will be attached to the RJ45 jack during testing.

From the DH Field Calibration screen, select Start or press AUTO TEST to perform the third calibration process.

Step 4

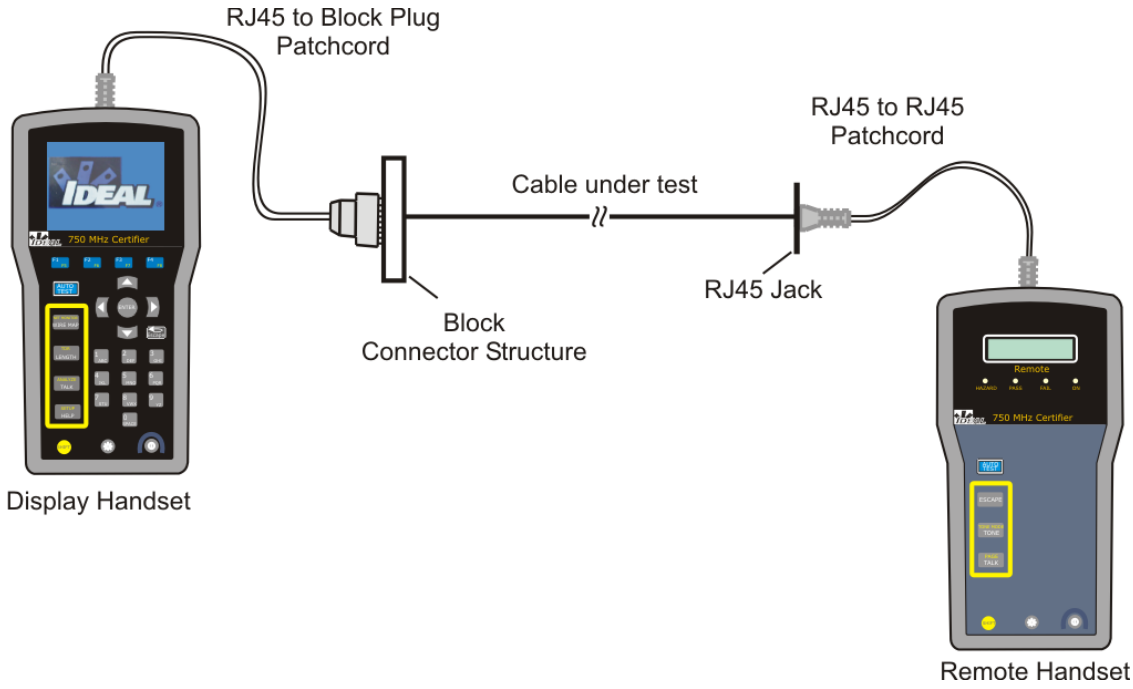
From on the RH, press AUTO TEST to perform the fourth calibration process.

If calibration is successful, the DH will briefly Display "Calibration Complete" and the RH will briefly display the PASS light. The handsets and the patchcords are ready for testing procedures.



If calibration is unsuccessful, the DH will briefly display either a Warning screen displaying "No Remote Handset" or a Calibration Failure screen.

Testing with a Block Connector System



Typical Configuration for Testing Systems with Block Connections

Typical configuration for testing has the DH unit connected to a block with the RJ45 end of the patchcord inserted into the DH and the block end of the patchcord inserted to the block connector structure. The RH unit is connected to the RJ45 jack within the LAN cable system using the standard RJ45 to RJ45 patchcord.

The patchcord with the RJ45 to block plug is usually connected to the Display Handset. However, if required, it can be connected to the Remote Handset by switching the patchcord from the DH to the RH and the RH to the DH.

Note: Observe the Wire Map results on the first test carefully. If the Wire Map fails, it may indicate a reversal between T568A and T568B wiring standards. Try replacing the adapter patchcord with the opposite patchcord and the link should map correctly.

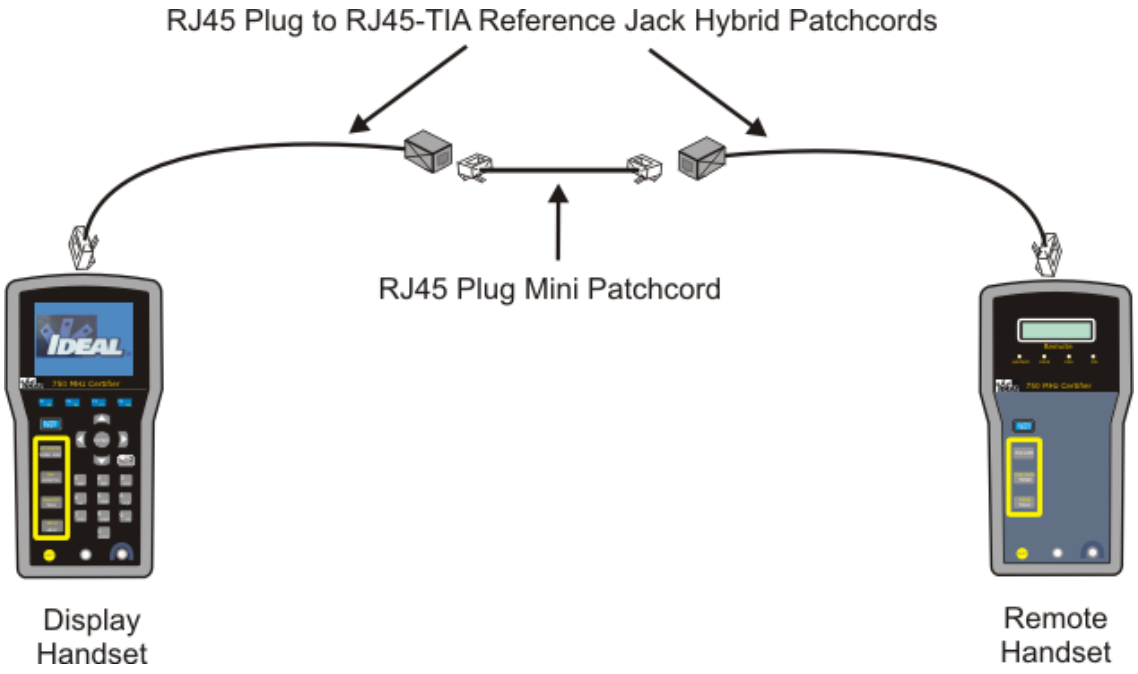
Testing and Troubleshooting with Patchcords

A field calibration should be performed prior to implementing a test with patchcords. This process will ensure (1) synchronizing of the units, (2) qualifying (testing) of the patchcords and (3) gathering of loss data regarding the patchcords and mated connections.

Calibration of Patchcords

Note: Patchcord Test Kits can be ordered from IDEAL INDUSTRIES.

The patchcord field calibration is a 4-step process. Process 1 and 2 are performed with the RJ45 Plug to RJ45-TIA Reference Jack hybrid patchcords attached from the DH and RH units and are connected via RJ45 Plug mini patchcord. Process 3 and 4 are performed with the RJ45 Plug to RJ45-TIA Reference Jack hybrid patchcords open-ended from their respective handsets. At completion of this process, the handsets and the hybrid patchcords are ready for the testing cables.



Patchcord Calibration Process

To calibrate the tester, perform the following:

Steps 1 and 2

Connect the Category 5e/6 channel adapters to the Display Handset (DH) and Remote Handset (RH). Power both units on.

Connect the RJ45 plug of the hybrid patchcords to the Display Handset (DH) and Remote Handset (RH).

Note: Patchcords can be 1, 2, 3, 4 or 5 meters in length. The most common length used is the 2-meter length patchcords.

Using the RJ45 mini patchcord, attach the DH RJ45-TIA Reference Jack end of the hybrid patchcord to one end of the mini patchcord then attach the RH RJ45-TIA Reference Jack end of the hybrid patchcord to the other end of the mini patchcord to complete the connection.

From the RH, press

to perform the first step of the calibration process.

Next, select **Field Calibration** from the DH Ready screen.
The Calibration screen appears.

From the DH Field Calibration screen, select

to perform the second step of the calibration process. At the completion of steps 1 and 2, disconnect the mini patchcord from the DH and RH hybrid patchcords.

Step 3

With the DH hybrid patchcord open-ended, select

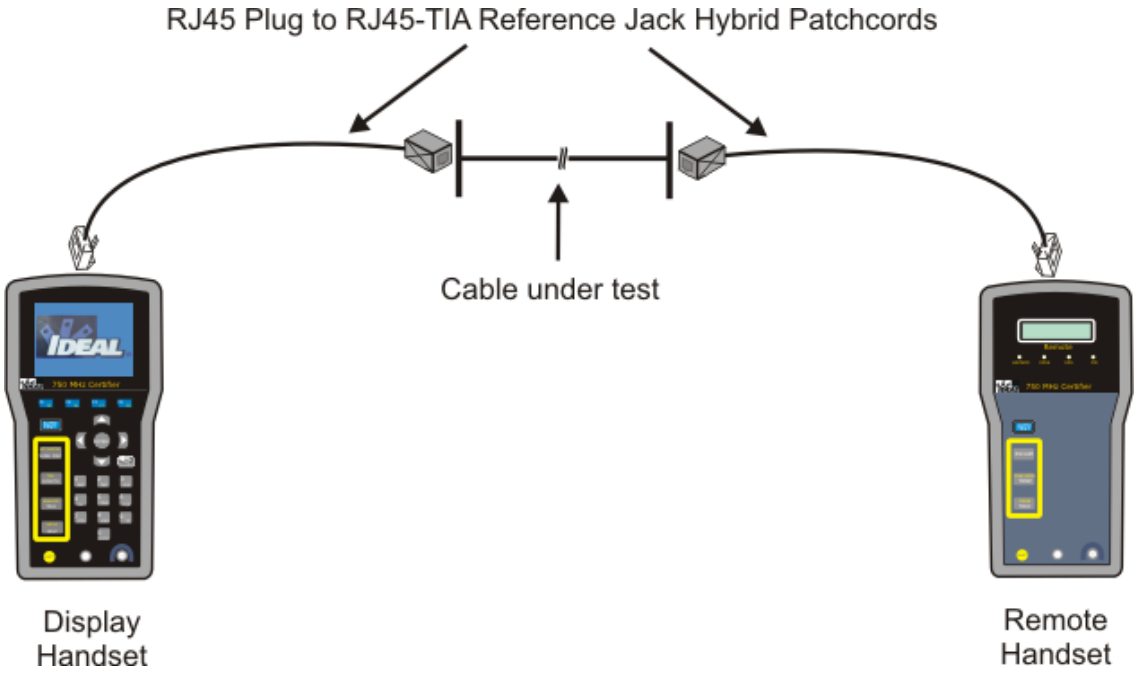
from the DH Field Calibration screen to perform the third calibration process.

Step 4

With the RH hybrid patchcord open-ended, press

from the RH to perform the fourth calibration process. Upon completion of the calibration process, the LANTEK handsets and the hybrid patchcords are ready for testing cables.

Testing with Patchcords



Typical Configuration for Testing with Patchcords

To perform a typical test procedure with patchcords:

1. Press both SHIFT and SETUP HELP keys at the same time, or select on the DH Ready screen. The Cable Type screen will appear.
2. Press the **Up/Down Arrow** keys to highlight Misc. Types.
3. Press **Enter** to open the Test Standard screen.
4. Select a cable type for testing.
5. Press AUTO TEST to perform the cable testing.

Using the Quick Test Feature

1. Press both SHIFT and SETUP HELP keys at the same time, or select on the DH Ready screen. The Cable Type screen will appear.

2. Press the **Up/Down Arrow** keys to highlight Misc. Types.

3. Press **Enter** to open the Test Standard screen.

4. Select Patchcord QT.

5. Press AUTO TEST to perform the cable testing.

Note: Using this feature for testing DOES NOT QUALIFY AS A CERTIFIED TEST. This feature promotes the beginning of troubleshooting processes by identifying poor cable integrity and further testing would be require to determine the extent of the issues involved with the particular cable under examination.

DUALmode™

The DUALmode™ feature on the LANTEK is primarily designed to provide both Permanent Link and Channel Link test results in about the same time that it would take to do each Autotest separate. For Category 6, that means both Channel and Permanent Link results are obtained and stored in about 20 seconds.

Based on the patent-pending technique that LANTEK uses to produce Permanent Link results, the dual mode adapters that physically resemble Channel Adapters and patchcords gathers both phase and magnitude data for the full channel. The LANTEK Cable certifier process then de-embeds the patchcords' losses and signal reflections to produce Permanent Link results. The DUALmode activity simply saves the results in two records.

Other significant tests can be performed under the DUALmode process. For example, consider the case where you, the installer, have a job to install a Category 6 class system in a government installation in a country that uses an ISO-based National Standard. You use cable and connectivity manufactured by a US-based company. The government may require the installer to certify the ISO-based CLASS E standard but the US Company may require certification to the TIA 568 Category 6 Standard in order to issue a warranty. Previously, this might have resulted running both ISO and TIA certifications and passing the increased costs to your client, the buyer. But with DUALmode, certifications to ISO CLASS E Permanent Link and TIA 568B Category 6 may be performed at the same time with no more effort than running only one of the tests.

Another example of performing DUALmode would be the determination of headroom with regards to higher bandwidth for future applications. Previously, you could visually inspect Category 5e Permanent Link Certification records and assess whether there is enough headroom to run the higher bandwidth applications. Alternatively, you could require that Category 6 certification tests also be completed to give definitive data. This action would normally be forfeited due to the increased testing cost.

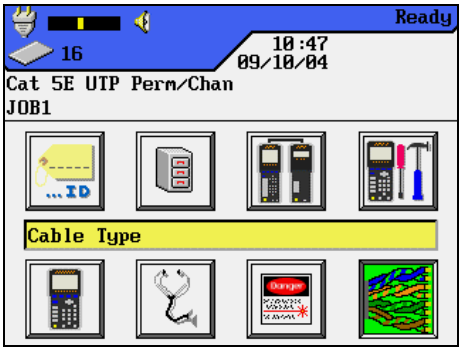
With DUALmode, you could require that the system be certified to Category 5e Standards and that the system be also tested against the Category 6 limits. That way, in the future, your client would have definitive data about which of the links could support higher bandwidth applications. This information would be essential in any decision to re-terminate links using higher Category jacks or to pull higher category cable.

To Perform in DUALmode:

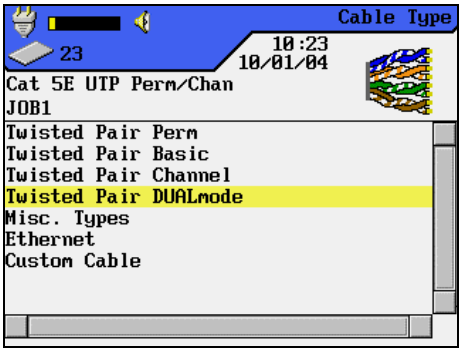
1. Select "F8" or "<Shift>F4" to bring up the READY screen.

2. Move the cursor to select the cable type icon and press **Enter**. The background of the selected icon is highlighted in a light green.

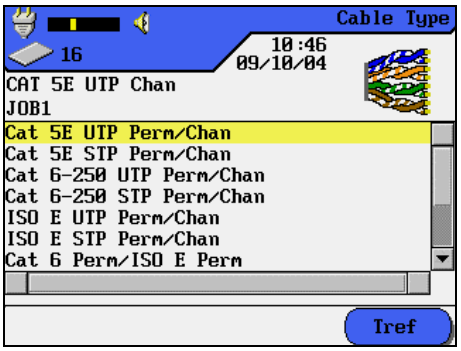
   This brings up the selection screen.



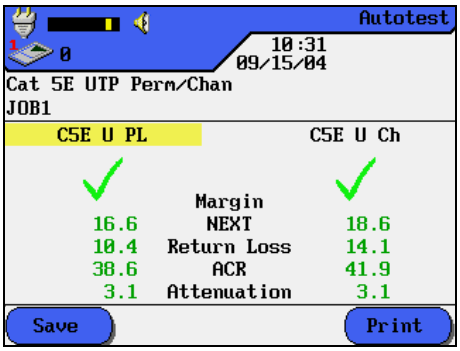
3. Move the cursor to "Twisted Pair DUALmode" and press **Enter**. This brings up the menu of DUALmode tests.



4. Now select the combination to be tested in DUALmode and press **Enter**.

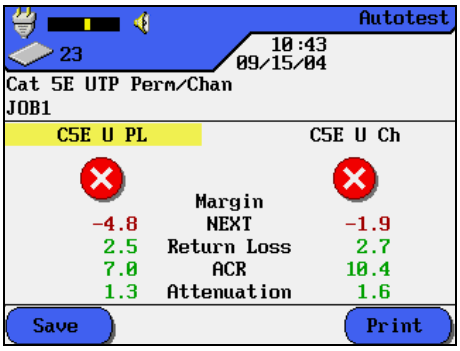


5. Now run the "AUTOTEST" and the PASS/FAIL results will look like this.



Worst-case margins for NEXT, RL, ACR and Attenuation are shown for each of the DUALmode tests.

Press **Enter** for the highlighted test and its related graphics will be displayed.



Setting LANTEK for Documenting of Cables to TIA/EIA 606-A Standards Format

The TIA/EIA 606-A standards for the telecommunications infrastructures include the following elements:

- Horizontal pathways and cabling,
- Backbone pathways and cabling,
- Telecommunications grounding/bonding,
- Spaces (e.g., entrance facility, telecommunications room, equipment room), and
- Firestopping.

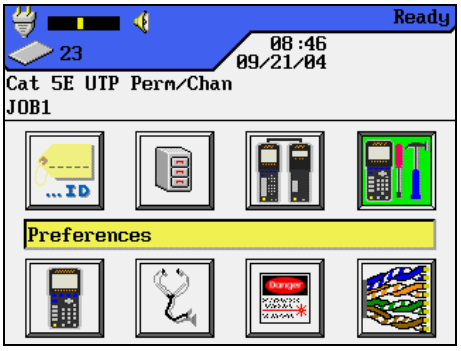
These Standards addresses the administration of telecommunications infrastructure by:

- Assigning identifiers to components of the infrastructure,
- Specifying elements of information which make up the infrastructure,
- Specifying relationships between these records to access the information they contain,
- Specifying reports presenting information on groups of records, and
- Specifying graphical and symbolic requirements.

Selecting Autotest Preferences to perform process of documenting TIA/EIA 606-A Standards

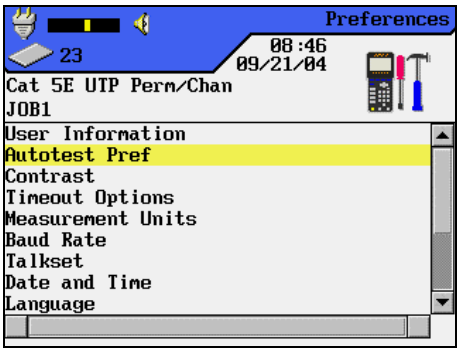
1. From the Ready screen, select the **Preferences** .

   The Preferences screen appears.

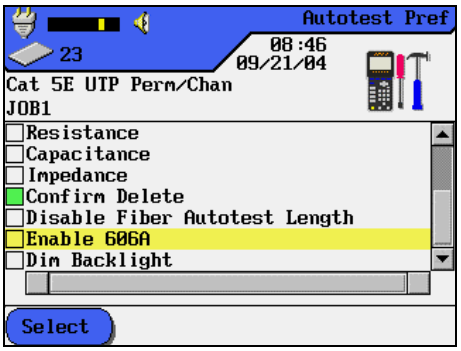


2. From the Preferences screen, use the **Up/Down Arrow** keys to select Autotest Pref.

   Press **Enter**. The Autotest Pref screen appears.

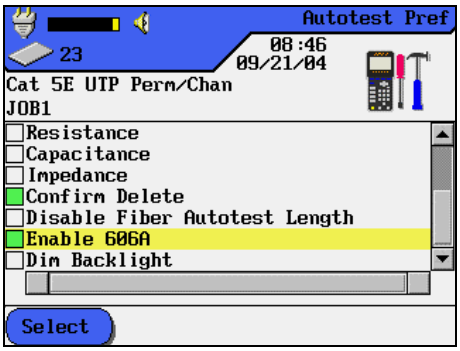


3. From the Autotest Pref screen, use the **Up/Down Arrow** keys to select Enable 606A.



4. Press **Select** to highlight the box green.

5. Press ENTER to save or Escape to exit.



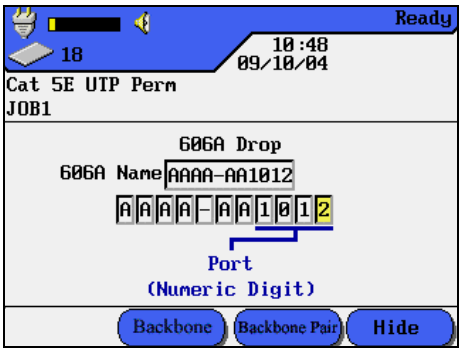
*Note: Pressing the **Escape** key and upon exiting, the user has the option to save or not save the changes selected during this process.*

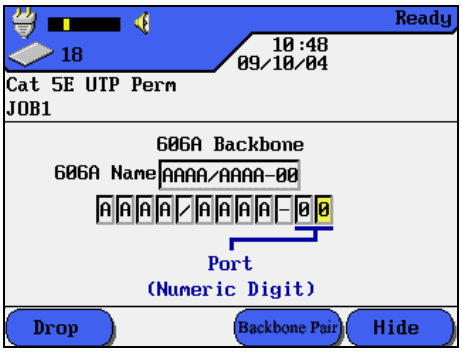
Saving in TIA/EIA 606-A Format

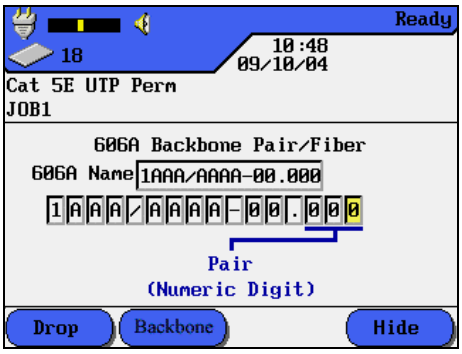
Once the Enable 606A selection process has been completed, press AUTO TEST to begin.

Note: LANTEK uses the Standards format in applying identification to the cables and their infrastructure relationship.

At completion of the Autotest activity, select one of three cable parameters (Drop, Backbone and or Backbone Pair) to set the cable name for the saving of results. The cable name can be perform in the Auto Increment feature or manually accomplished.







Press ENTER to save the cable name and results or Escape to exit.

*Note: Pressing the **Escape** key and upon exiting, the user has the option to save or not save the changes selected during this process.*

By pressing both SHIFT and F4 F8 keys at the same time or by selecting on the DH Ready screen the naming of a 606-A Standards cable parameter can also be edited.

Note: Testing of other cable types while in the Enable 606A mode cannot be performed; you must de-select this activity in the Autotest Pref screen prior to testing other cable types.

Testing and Troubleshooting Fiber Optics Moved to FIBERTEK™/TRACETEK™

FIBERTEK™ allows you to perform optical power loss measurements for both Singlemode and Multimode fiber optic cables on either the LANTEK® 6 or 7/7G Cable Certifiers.

The fiber testing performed makes use of laser sources for all wavelengths, permitting certification of Gigabit Ethernet applications on the fiber optic cable.

TRACETEK™ is an advanced troubleshooting tool designed to quickly identify and provide assistance in diagnosing common cabling problems.

Fiber Optics testing and troubleshooting kit(s) are available and contain the FIBERTEK™ and/or TRACETEK™ products as well as detailed information within a manual structure regarding their function.

For further details and/or procurements of these products call your local IDEAL INDUSTRIES representative.

Part Number Changes

Item	Part Number
Headset, Set of 2; Includes earphone, microphone, vinyl case and user's guide	3010-70-0015
Category 6 Channel Adapter	0012-00-0629
Category 7/7G Channel Adapter	0012-00-0628
Serial Cable	6011-59-0031
USB Cable	6011-59-0030
64 MB Compact Flash Card	2112-27-0602

LANTEK 6/7/7G Cable Testers

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